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Two Dimensional Simulations of Fluctuation Reflectometry * ALBERT E. CHOU, *University of California, Los Angeles*, BEDROS B. AFEYAN, *Lawrence Livermore National Laboratory*, NEVILLE C. LUHMANN JR., *University of California, Davis* — A comprehensive series of two dimensional simulations using our electromagnetic wave propagation code SOFTSTEP have been undertaken in order to study the scattering properties of two dimensional fluctuation wavepackets in plasmas with two dimensional inhomogeneities. New phase extraction algorithms have been devised in order to incorporate the effects of finite surface area launching and detecting antennae.

The resulting phase mixing and optical path sensitive effects are shown in the context of correlation reflectometry. Comparisons are made with 1D simulations where the Bragg resonance and oscillating mirror pictures are alternatively invoked in order to explain experimental data.

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